OIPE IAP22

JAN 27 2006

PATENT & TRADEMARK OFFICE

01-30-06

AF|215)

JPW

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400
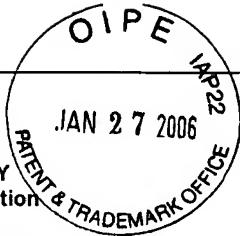
PATENT APPLICATION

ATTORNEY DOCKET NO. 6215-000049

Inventor(s): Dirk Hogan

Application No.: 10/038,205

Filing Date: January 4, 2002

Confirmation No.:

Examiner: Nghi V. Tran

Group Art Unit: 2151

Title: Efficient Validation of Network Configuration Change Commands

Mail Stop
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER FOR RESPONSE/AMENDMENT

Transmitted herewith is/are the following in the above-identified application:

☐ Response/Amendment
☐ New fee as calculated below
☐ No additional fee
☒ Other _Brief on behalf of Appellants_

☐ Petition to extend time to respond
☐ Supplemental Declaration

Fee$

CLAIMS AS AMENDED BY OTHER THAN A SMALL ENTITY						
(1) FOR	(2) CLAIMS REMAINING AFTER AMENDMENT	(3) NUMBER EXTRA	(4) HIGHEST NUMBER PREVIOUSLY PAID FOR	(5) PRESENT EXTRA	(6) RATE	(7) ADDITIONAL FEES
TOTAL CLAIMS		MINUS		= 0	X $50	$ 0
INDEP. CLAIMS		MINUS		= 0	X $200	$ 0
☐ FIRST PRESENTATION OF A MULTIPLE DEPENDENT CLAIM					+ $360	$ 0
EXTENSION FEE	☐ 1st Month $120	☐ 2nd Month $450	☐ 3rdMonth $1020	☐ 4th Month $1590		$ 0
					OTHER FEES	$
				TOTAL ADDITIONAL FEE FOR THIS AMENDMENT		$ 0

Charge $ __0__ to Deposit Account 08-2025. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Alexandria, VA 22313-1450.

Date of Deposit: January 27, 2006

Typed Name: / Dolores R. Lamar

Signature:

EV 717 344 070 US (1/27/2006)
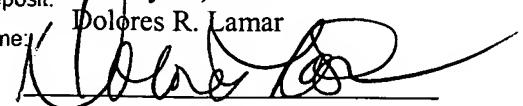
Rev 10/05 (TransAmd)

Respectfully submitted,

By
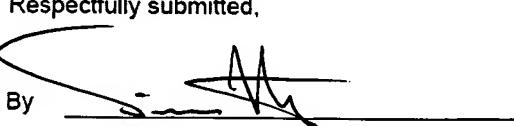
Timothy D. MacIntyre

Attorney/Agent for Applicant(s)

Reg No. : 42,824

Date : January 27, 20065

Telephone : (248) 641-1600

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applic Serial No.:	10/038,205	)
		)
Filing Date:	Jan. 4, 2002	)
		)
Applicant:	Dirk Hogan	) **Appeal Brief**
		)
Examiner:	Nghi V. Tran	)
		)
Group Art Unit:	2151	)
		)
Title:	Efficient Validation of Network	)
	Configuration Change Commands	)
		)
Attorney Docket No.	6215-000049	)
		)

BRIEF ON BEHALF OF APPELLANTS

This is an appeal from the action of the Examiner dated September 23, 2005, finally rejecting Claims 1, 2, and 4-16 of the present application. Copies of the appealed claims are attached as an appendix.

I. Real Party In Interest

Hewlett-Packard Development Company, L. P., a Texas Limited Partnership having its principal place of business in Houston, Texas.

II. Related Appeals and Interferences

There are no known related appeals or interferences which will directly affect, be directly affected by, or otherwise have a bearing on the Board's decision in the pending appeal.

III. Status Of The Claims

Claims 1, 2 and 4-11 are pending in the present application. Each of these pending claims stand rejected and are appealed.

IV. Status Of Amendments

Applicant's response after final rejection did not propose any amendments to the pending claims. Therefore, Claims 1, 2 and 4-11 stand as presented in the response filed on November 28, 2005 and as presented in the attached appendix.

V. Summary Of The Invention

Management of storage resources is an essential aspect of implementing and maintaining storage area networks. Storage management may encompass a broad range of storage functions including file access, volume management and data backup. Of particular interest, storage management includes the ability to dynamically allocate individual storage units to shared storage groups and/or specific storage servers.

Dynamically allocating storage units is typically achieved through change commands issued from one or more of the client workstations having access to the storage area network. Because change commands can be scheduled for execution at a later time and can be issued (possibly concurrently) by several client workstations, it is desirable to verify the appropriateness of each change command before the request is implemented in the network. Specifically, it is desirable to determine if the desired changes embodied in the change commands are expressed in terms of the current network configuration.

An improved method is provided for validating change commands in a network environment. The improved method relies upon the realization that any delta, such as a change command set, implicitly indicates an initial state. In other words, a change cannot exist autonomously, but rather exists relative to an initial state. Likewise, network change commands implicitly indicate an initial configuration state of the network. Thus, it is possible to check if the initial configuration state expressed in a given change command corresponds to the current configuration state of the network.

Referring to Figure 2 of the present application, a change command set 32 is compared at step 34 to a virtual representation 36 of the physical network configuration.

3

The virtual representation 36 is a detailed model of the physical state of the network. Thus, the virtual representation 36 expresses the current configuration state of the network. If the change command was defined relative to the current state of the network, then the change commands are implemented at step 38 by the network management server. On the other hand, if the change command does not correlate to the current state of the network (at least with respect to the devices implicated by the command), then the change command is deemed an invalid request. In this way, an improved method is provided for validating network change commands in a network environment.

VI. Issues

I.   Are Claims 1, 2, 4, 7, 8, 11, 12, 14 and 15 unpatentable over U.S. Patent No. 6,654,830 (Taylor) under 35 U.S.C. §102(e)?

II.   Are Claims 5, 6, 9 and 10 unpatentable over Taylor in view of U.S. Patent No. 6,026,462 (George) under 35 U.S.C. §103(a)?

VIII.   Arguments

I.   Claims 1, 2, 4, 7-8, 11-12 and 14-15 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,654,830 (Taylor). This rejection is respectfully traversed.

Claim 1

Taylor is directed generally to a method for managing data migration for a storage system. Of interest, the Examiner interprets the control signal which initiates the hot copy

4

process to be a change command as recited in Applicant's claimed invention. However, Taylor fails to teach or suggest determining if the hot copy process is expressed in terms of the current configuration state of the network and then implementing the hot copy process only when it is expressed in terms of the current configuration state of the network. Rather, the hot copy process appears to be initiated without any type of validation. In contrast, Applicant's invention is directed generally to an improved method for validating network change commands before such commands are implemented in a storage area network.

For instance, Claim 1 recites "comparing the initial configuration state indicated by the change command to the current configuration state of the network; and implementing the change command when the initial configuration state indicated by the change command correlates to the current configuration state of the network". During the telephone interview, the Examiner pointed to the priority assigned to the hot copy process as disclosing the recited comparison step and implementing step. In fact, Taylor discloses that data access requests are mapped to the first device 11 or the second device 12 depending on the progress of the hot copy process. When the hot copy process is assigned a low priority, then a requesting client will not experience significant delay in fulfillment of its data access request (col. 6, lines 11-13). Conversely, when the hot copy process is assigned a high priority, then a requesting client may experience some delay in fulfilling the data requests (col. 6, lines 13-17). The assigned priority is not being compared, rather it provides an indication as to how long it will take to complete the copy process. Moreover, the assigned priority has nothing to do with whether or not the hot copy process will be initiated. Taylor does not disclose under what network conditions the hot copy process is initiated. Therefore, Taylor fails to teach or suggest

5

implementing the change command (i.e., hot copy process) when the initial configuration state indicated by the change command correlates to the current configuration state of the network as recited in Applicant's claimed invention. Therefore, it is respectfully submitted that Claim 1 defines patentable subject matter over Taylor.

Claim 4

Claim 4 further recites "disregarding the change command as being an invalid request when the initial configuration state indicated by the change command does not correlate to the current configuration state of the network". Under what network conditions is the hot copy process disregarded? Taylor is again silent as to this question. Therefore, it is respectfully submitted that this claim defines patentable subject matter over Taylor.

Claim 7

The Board's attention is also drawn to Claim 7. Claim 7 recites "determining if the storage allocation command is expressed in terms of the current configuration state of the network" in combination with other elements of the claim. Again, the Examiner interprets the hot copy process as the storage allocation command. How does Taylor determine if the hot copy process is expressed in terms of the current configuration state of the network? No such determination is made by Taylor. Likewise, Taylor does not disclose under what network conditions the hot copy process is initiated as described above. Taylor further fails to teach or suggest implementing the storage allocation command (i.e., hot copy process) when the storage allocation command is expressed in terms of the current configuration state of the network as recited in this claim. Therefore,

6

it is respectfully submitted that Claim 7 defines patentable subject matter over Taylor.

Claims 11, 12, 14 and 15

Applicant further notes that the remaining dependent claims further define a particular type of change command as well as how these commands implicitly indicate the current network configuration. These types of change commands are not disclosed in Taylor and thus also recite patentable subject matter. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

II. Claims 5, 6, 9 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Taylor in view of U.S. Patent No. 6,026,462 (George). This rejection is respectfully traversed.

With regard to these claims, the change command is further defined as either an assign command that establishes an association between a storage unit to a storage server or an unassigned command that disassociates a storage unit from a storage server. The Examiner relies upon George to teach the use of an assign command or unassign command for configuring a SAN, but otherwise applies Taylor as described above (i.e., hot copy process as the change command). Since neither Taylor nor George discloses the steps of validating network change commands before such commands are implemented as recited in the pending claims, it is submitted that these claims also define patentable subject matter over this combination of references.

To the extent that the Examiner interprets either the read request or the write request in Taylor as being the change command, Applicant asserts that that the Examiner has failed to establish a prima facie case of obviousness as required by

Graham v. John Deere Co., 148 USPQ 459 (1966). First, Applicant notes that assign and unassign commands operate at a network configuration level to control how the storage devices are associated with servers. In contrast, the read and write requests are functioning at a data level to manipulate data stored within the storage devices. For at least this reason, the teachings regarding the read or write request are not applicable to Applicant's claims invention and, in particular, not applicable to the subject matter of Claims 5, 6, 9 and 10. Moreover, for this same reason, Applicant contends that one skilled in the art would not think to combine the teachings of these two references. In other words, there is not proper motivation for combining the teachings of these two references. As set forth in MPEP §2145(x)(C), the Federal Circuit has produced a number of decisions overturning obviousness rejections due to the lack of suggestion in the prior art of the desirability of combining the references. Accordingly, applicant respectfully requests the Examiner to reconsider and withdraw this rejection.

X. CONCLUSION

For the foregoing reasons, the appealed claims are patentably distinguishable over the art relied upon by the Examiner. Accordingly, Applicant's representative respectfully requests that this Board reverse the final rejection of Claims 1, 2 and 4 -11.

Respectfully submitted,
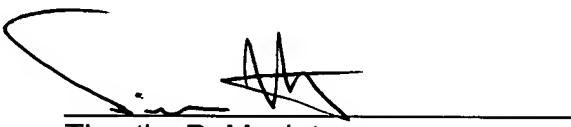
Timothy D. MacIntyre
Registration No. 42,824

HARNESS, DICKEY & PIERCE
P.O.Box 828
Troy, Michigan 48303
(248) 641-1600

TDM/drl

X. Claims On Appeal

1.   (previously presented) A method for validating network configuration change commands in a network environment, comprising:

providing a change command to a network management device residing in the network, the change command expresses a change to the configuration of the network and implicitly indicates an initial configuration state of the network;

determining a current configuration state of the network;

comparing the initial configuration state indicated by the change command to the current configuration state of the network; and

implementing the change command when the initial configuration state indicated by the change command correlates to the current configuration state of the network.

2.   (original)   The method of Claim 1 wherein the step of determining a current configuration state of the network further comprises accessing a virtual representation of the network configuration.

4.   (original)   The method of Claim 3 further comprising the step of disregarding the change command as being an invalid request when the initial configuration state indicated by the change command does not correlate to the current configuration state of the network.

5. (original) The method of Claim 1 wherein the change command is further defined as an assign command that establishes an association between a storage unit to a storage server, where the assign command implicitly indicates that the storage unit is currently not assigned within the network.

6. (original) The method of Claim 1 wherein the change command is further defined as an unassign command that disassociates a storage unit from a storage server, where the unassign command implicitly indicates that the storage unit is currently assigned within the network.

7. (original) A method for validating storage allocation commands in a storage area network, comprising:

providing a storage allocation command to a network management device residing in the network, the storage allocation command expresses a change to the configuration of storage resources and implicitly indicates an initial configuration state of the storage resources in the network;

determining a current configuration state of the storage resources in the network;

determining if the storage allocation command is expressed in terms of the current configuration state of the network; and

implementing the storage allocation command when the storage allocation command is expressed in terms of the current configuration state of the network.

8. (original) The method of Claim 7 further comprising the step of disregarding the storage allocation command as being an invalid request when the storage allocation command is not expressed in terms of the current configuration state of the network.

9. (original) The method of Claim 7 further comprising:

providing an assign command to the network management device, where the assign command establishes an association between a storage unit to a storage server, thereby granting the storage server read-write access to the storage unit;

determining if the storage unit is currently assigned in the network; and

implementing the assign command when the storage unit is currently unassigned in the network.

10. (original) The method of Claim 7 further comprising:

providing an unassign command to the network management device, where the unassign command disassociates a storage unit from a storage server;

determining if the storage unit is currently assigned in the network; and

implementing the unassign command when the storage unit is currently assigned in the network.

11. (original) The method of Claim 7 wherein the storage allocation command is selected for the group consisting of: assigning a storage unit to a storage server; assigning a storage unit to a shared group; and assigning a

12

storage unit to an associated LUN group.

12.   (previously presented) The method of Claim 11 wherein the storage allocation command implicitly indicates that the storage unit is not currently assigned to either the storage server or the associated LUN group and is not currently grouped in the shared group.

13.   (original)   The method of Claim 11 further comprising:

determining if the storage unit is currently assigned in the network;

determining if the storage unit is currently grouped in the network; and

implementing the storage allocation command when the storage unit is currently not assigned and not grouped in the network.

14.   (original)   The method of Claim 7 wherein the storage allocation command is selected from the group consisting of: assigning an associated LUN group to a storage server; assigning an associated LUN group to a shared group; and assigning a storage server to a shared group.

15.   (original)   The method of Claim 14 wherein the storage allocation command implicitly indicates that each storage unit implicated by the command is associated with at least one of the associated LUN group and the shared group.

16.   (original)   The method of Claim 15 further comprising:

determining   each   storage   unit   associated   with   at   least   one   of   the

associated LUN group and the shared group;

determining if each storage unit is currently grouped in the network; and

implementing the storage allocation command when each of the storage

units is currently grouped in the network.